DuPont™ Electrodeionization (EDI) Module

Model: EDI-520

Key Features

- Premium ion exchange resins in the EDI modules can deliver consistent high-purity water production while reducing operating resistance and improving efficiency.
- Two-outlet configuration can eliminate the need for a separate discharge pipeline, simplifying installation and operation.
- Integrated plate-and-frame sealing enhances reliability.
- Compact, stackable design helps reduce footprint requirements.
- No chemical regeneration for easier operation and maintenance.

Key Applications

Ideal for high-purity and ultrapure water applications across various industries:

- Power generation and green hydrogen.
- Chemical, coal to chemical, and petrochemical.
- Metallurgy, such as steel and non-ferrous metals.
- Microelectronics, such as solar photovoltaic and semiconductor chips assembly and test.
- Light industries such as pulp and paper.

Typical Properties

Model	Nominal Product Water Flow Rate (m^3/h)	Product Water Resistivity[1] (MΩ · cm)	Silica (as SiO_2) Removal[2]
EDI-520	5	≥16	90-99%

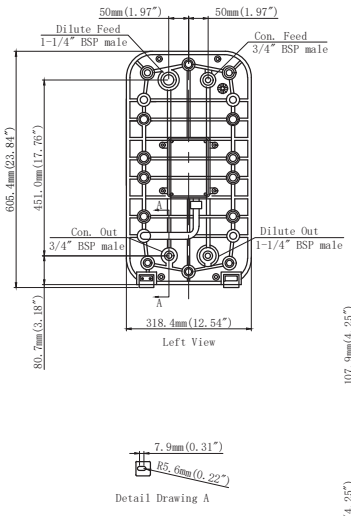
[1] Test condition: Feed water conductivity 20μS/cm NaCl, 77°F (25°C) and 90% recovery. Actual performance depends on project-specific feedwater quality and operating conditions.

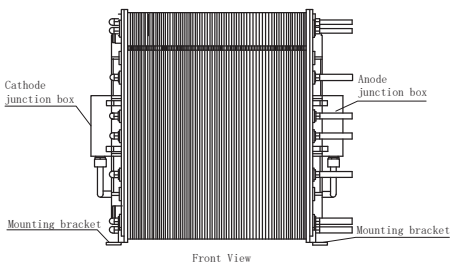
[2] Actual performance depends on project-specific feedwater quality and operating conditions.

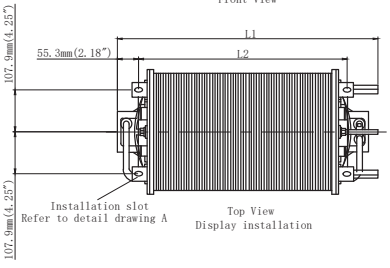
Product Parameters

Model	Dilute Inlet and Outlet Connections		Concentrate Inlet and Outlet Connections		Dimensions			Mounting	Weight
	Size	Type	Size	Type	W mm/in	H mm/in	D L1 mm/in	L2 mm/in	(kg/lb)
EDI-520	1-1/4"	BSP male	3/4"	BSP male	318.4/12.54	605.4/23.84	870/34.3	750/29.5	147/324









Feedwater Quality Specifications

Index	Parameter
Feed water source[3]	RO permeate
FCE[4]	≤ 40 µS/cm
Hardness (as $CaCO_3$)[5]	≤ 1.0 ppm
pH (operating range)	5–9
Silica (SiO_2)[6]	≤ 1.0 ppm
Total organic carbon (TOC)	≤ 0.5 ppm
Total chlorine (as Cl_2)	≤ 0.05 ppm
Fe, Mn, H_2S	≤ 0.01 ppm
SDI_{15}	< 1.0
Oil/grease (mg/L)	Not detectable
Oxidants (mg/L)	Not detectable
Color (APHA)	<5.0

Operating Conditions

Index	SI Units	US Units
Dilute stream product flow	2.6–7.7 m^3/h	11.5–33.9 gpm
Recovery	Up to 95%	
Feedwater temperature	5–40 °C	41–104 °F
Feedwater pressure (maximum)	6.9 bar	100 psig
Dilute pressure drop[7]	1.5–2.5 bar	22–36 psig
Dilute outlet pressure more than concentrate outlet pressure	0.35–0.7 bar	5–10 psig
Operating current (maximum)	6 A	
Operating voltage (maximum)	300 VDC	

[3] Typically feed water source is 2nd pass RO permeate.
[4] FCE (Feed Conductivity Equivalent) includes conductivity, CO_2, and SiO_2.
[5] Typically feed hardness is ≤ 0.1 ppm as $CaCO_3$.
[6] Typically feed silica is ≤ 0.2 ppm as SiO_2.
[7] at nominal flow rate and 25 °C.

Important Information

Proper startup of the EDI system is essential to condition the module for operation and prevent damage. Before starting the EDI system, confirm that all instrument calibrations and system checks have been completed and that the RO permeate quality meets the EDI operating requirements. If a buffer tank is used, ensure that the tank, all piping, and all headers leading to the EDI modules have been thoroughly flushed before startup. For more information, refer to the DuPont™ EDI product manual. DuPont™ EDI modules are designed to deionize RO permeate and must be operated within the feedwater specifications listed above. Failure to strictly follow the operating limits and guidelines in this document will avoid the limited warranty. Refer to the DuPont™ EDI product warranty terms for details.

Operating Guidelines

Hydrogen, oxygen, and chlorine are generated at the electrodes through water electrolysis and are discharged with the concentrate stream. These gases must be properly vented to prevent accumulation. EDI modules are sensitive to particulate contamination; blockage within the resin bed increases pressure drop and can immediately affect demineralization performance. Oxidizing agents, such as chlorine, attack ion exchange membranes and resin beads and may cause irreversible damage.

Product Stewardship

DuPont is committed to the safety of all those who manufacture, distribute, and use its products, as well as to protecting the environment on which we all depend. This commitment forms the basis of our product stewardship philosophy: we assess product safety, health, and environmental information and take appropriate steps to protect employees, the public, and the environment. The success of product stewardship depends on everyone involved throughout the life cycle of DuPont products—from initial concept and research through manufacture, use, sale, disposal, and recycling.

Customer Notice

DuPont strongly recommends that customers review their manufacturing processes and applications of DuPont products from the perspectives of human health and environmental quality to ensure that DuPont products are not used in ways for which they were not intended or tested. DuPont personnel are available to answer questions and provide reasonable technical support. DuPont product literature, including safety data sheets, should be consulted before using DuPont products.

Important Notice

This product is not intended for drinking water applications.

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